Admin Council Meeting Minutes
May 1, 2023, 4:00-5:00 PM

Agenda
- Robotics MS and PhD Proposal
- Strategic Planning
- College CRPT Guidelines
- CU Book Access Program
- Summer Work Modality
- Budget Process Update
- EAC Call for Nominations Process

Dean Keith Molenaar began the meeting at 4:00 p.m.

Robotics MS and PhD Proposal
Sean Humbert, Professor in Mechanical Engineering, presented the proposal for a new Robotics MS and PhD degree program (see attached). The proposal will go before the Graduate School in May and the Regents in June 2023. If approved, the degree will have a 'soft' launch in fall 2023, and a full launch in fall 2024. The Admin Council discussed the proposal and was supportive of moving it to the next stages of approval.

Strategic Planning
Keith Molenaar updated the council that the college's strategic plan will be completed this spring with final iterations and production in the summer. The draft document will be open through Friday, May 5 for the engineering community to provide comments. The deadline for the units to complete their plans has been extended to December 2023, but some units plan to finish earlier. Once completed, our communications team will support production of unit strategic plans in electronic and print forms.

College CRPT Guidelines
Keith briefly reviewed the draft Comprehensive Review, Reappointment and Tenure (CRPT) guidelines (see attached). Departments were asked in August 2022 to begin updating their unit criteria with the goal of getting everyone in sync with the required seven-year renewal cycle (the next cycle will be in 2030). The unit updates created the need to update the college CRPT criteria. College criteria are advisory to the primary units and provide consistency across the college. He requested the council to provide input on the draft document through the webform on the college website so that the units can move forward with their updates. Final college criteria will be published this spring. The deadline for unit criteria updates has been extended from spring 2023 to fall 2023.

CU Book Access Program
Medford Moorer, Assistant Dean for Strategic Initiatives, briefly discussed the CU Book Access Program, which will provide degree-seeking undergraduate students enrolled in 4-plus credit hours access to their course materials for a flat-rate price each semester. This is similar to open access material, and it does not change anything for faculty, as the costs to the students will not change by the materials the faculty selects.

Summer Work Modality
Keith and Monique McCloud, Assistant Dean for Organizational Development, Culture and Equity, discussed plans for summer work modality. The college will continue using the [College Hybrid Work Policy](#) that was implemented last year, which states that during the summer, the work modality should be at the discretion of the unit (please see the website for full details). The college supports the decisions of the units. If there are questions or if anyone needs support, please contact Monique directly.

Budget Process Update
Keith presented an update to the current budget process, including a year-over-year outlook from the new budget model. The important updates are that the college is now responsible to cover the 4% raises for faculty, staff and new hires, and the departments that have a lower/decreased SCH will have an adjustment. More information is forthcoming as the college works towards issuing the FY24 budgets in August.

EAC Call for Nominations Process
Medford and Keith reviewed the new Engineering Advisory Council (EAC) recruiting process and calendar. These updates will be added to the website. They encouraged the council to think of people that could be good candidates and nominate them in the fall.

Meeting adjourned at 5:00

Proposed New MS and PhD Degree Programs in Robotics at CU Boulder

Sean Humbert (ME)
Chris Heckman (CS)
Marco Nicotra (ECEE)
Nisar Ahmed (AES)

- CEAS leadership has made investments in two Interdisciplinary Research Themes (IRTs): Autonomous Systems (ASIRT) and Multifunctional Materials (MFM)

- Center for National Security Initiatives (NSI) was launched 2 years ago to expand the engagement of CU in the national security sector

- Robotics Graduate Program will provide the educational backbone to support the above seeded efforts

Distribution of Robotics Research at CU
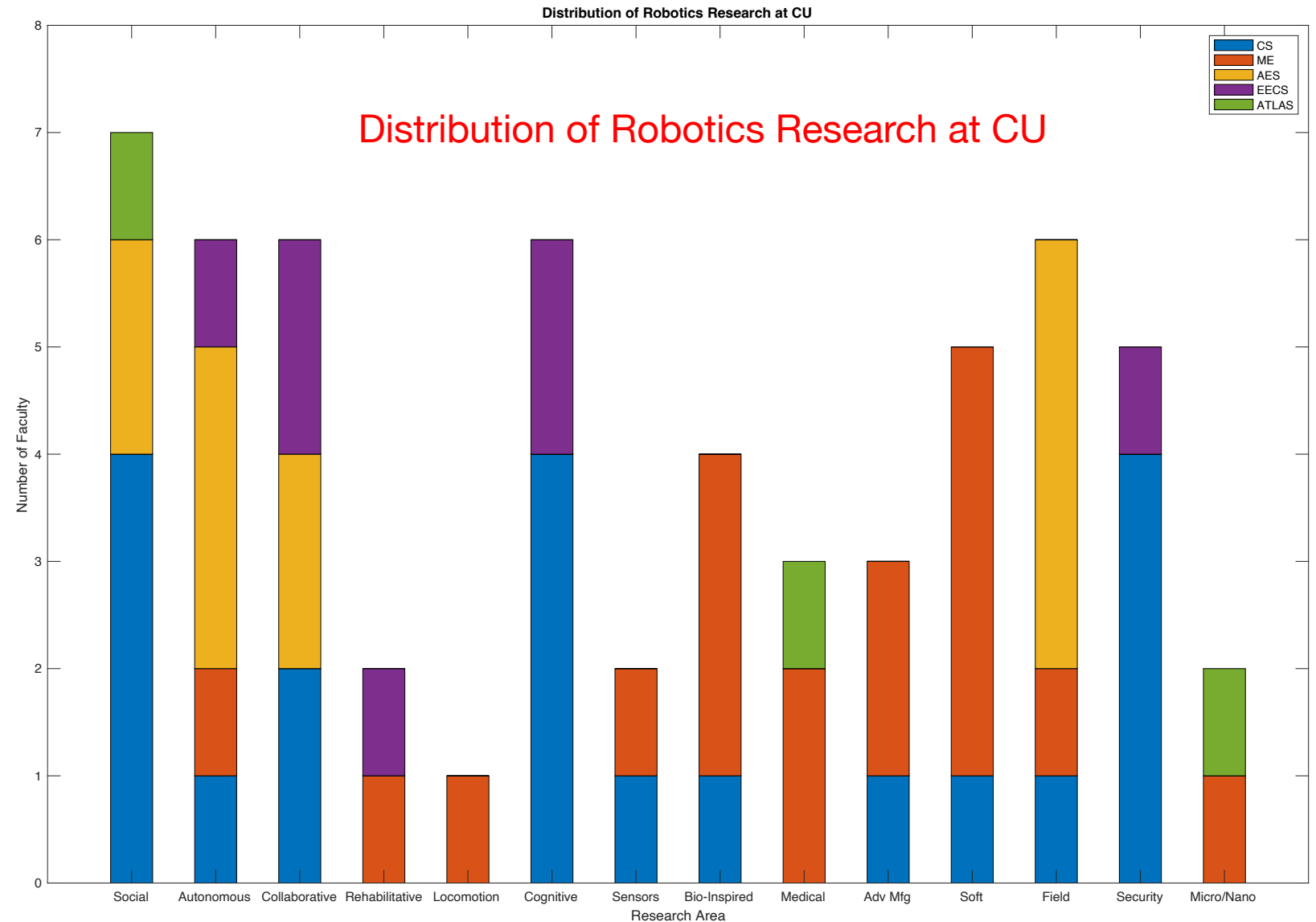
Robotics Faculty

Last	First	Research Areas	Rank/Title	Dept
Ahmed	Nisar	Collaborative human/autonomous systems, estimation, control, AI, machine learning	Associate Professor	AES
Anderson	Allison	Human factors, augmented reality, human-autonomous systems interaction	Assistant Professor	AES
Argrow	Brian	UAVs, hypersonics	Professor	AES
Frew	Eric	Networked UAS, collaborative sensing and robotics, GNC	Professor	AES
Clark	Torin	Aerospace human factors, interaction of human-autonomous systems	Assistant Professor	AES
Holzinger	Marcus	Space situational awareness, information theory, optimal control, robotics	Associate Professor	AES
Lahijanian	Morteza	Formal methods, hybrid systems, HRI	Assistant Professor	AES
Lawrence	Dale	Autonomous systems, astrodynamics and sattelite navigation systems	Professor	AES
McMahon	Jay	Autonomy, GNC	Associate Professor	AES
Sunberg	Zachary	Safety for autonomous vehicles, AI, flight control, HRI	Assistant Professor	AES
Williams	Christopher	Radar, perception	Research Professor	AES
Alistar	Mirela	Cyber-physical systems based on biochips	Assistant Professor	ATLAS / CS
Devendorf	Laura	Human-computer interaction, smart textiles	Assistant Professor	ATLAS / Info Sci
Gross	Mark	Modular robotics, design	Professor	ATLAS / CS
Leithinger	Daniel	Shape-changing human computer interfaces	Assistant Professor	ATLAS / CS
Baker	Kyri	Power systems, smart grid, machine learning in energy, distributed optimization	Assistant Professor	CEAE
Chen	Lijun	Control and optimization of complex networked systems, game theory	Assistant Professor	CS
Correll	Nikolaus	Smart materials	Associate Professor	CS
Hayes	Brad	AI, HRI	Assistant Professor	CS
Heckman	Chris	Autonomy, perception, field robotics, machine learning, AI	Assistant Professor	CS
Morrison	Rebecca	Sparse structure learning for predicting bahavior of physical systems	Assistant Professor	CS
Peleg	Orit	Distributed systems, local sensing in disordered living systems	Assistant Professor	CS / Biofrontiers
Roncone	Alessandro	Human-robot collaborations, natural language task planning	Assistant Professor	CS
Zamani	Majid	Cyber-physical systems, verification, hybrid systems, networked systems, control	Assistant Professor	CS
Chen	Xudong	Geometric control theory, stochastic processes, optimization,game theory	Assistant Professor	ECEE
Dall'Anese	Emiliano	Cyber-physical systems, optimization, singal processing, control	Assistant Professor	ECEE
Nicotra	Marco	Constrained control of nonlinear systems, model predictive control	Assistant Professor	ECEE
Pao	Lucy	Control systems, multisensor fusion, haptics, wind energy	Professor	ECEE
Ahmed	Alaa	Biomechanics, neural control of movement, motor learning	Associate Professor	ME
Humbert	Sean	Autonomy, perception, bio-inspired robotics, soft robotics, field robotics	Professor	ME
Jarayam	Kaushik	Bio-inspired robotics, biomechanics, micro-nano robotics	Assistant Professor	ME
Keplinger	Christopher	Soft robotics and actuation	Affiliate Faculty	ME
MacCurdy	Robert	Automated design, robot fabrication, biological sensing	Assistant Professor	ME
Rentschler	Mark	Medical mechatronics, medical device design, surgical robotics	Professor	ME
Xu	Nicole	Bio-inspired robotics, underwater robotics	Assistant Professor	ME
Welker	Cara	Biomechanics, haptics, medical devices	Assistant Professor	ME
Shields	Wyatt	Active matter, soft materials	Assistant Professor	ChBE
Hayward	Ryan	Soft, active materials, nanostructures	Professor	ChBE
White	Tim	Soft materials	Professor	ChBE

- ~40 interested faculty total
- 13 faculty interested in leadership roles (green)
- Spans AES, CS, ATLAS, CEAE, ECEE, ME, ChBE and Biofrontiers

MS Degree (PMP, non-thesis)

- 30 credit hours (5000+ level courses)
- Minimum GPA 3.00
- 18 credit hours in ROBO courses
- One core course required: ROBO 5xxx: Intro to Robotics
- Candidacy: C or better in all 5000+ level courses

MS Degree (Thesis)

- 30 credit hours (5000+ level courses)
- 4-6 thesis credit hours (of the 30 requirement)
- Minimum GPA 3.00
- 18 credit hours in ROBO courses
- One core course required: ROBO 5xxx: Intro to Robotics
- Candidacy: C or better in all 5000+ level courses

PhD Degree

- 30 credit hours (5000+ level courses)
- 30 dissertation credit hours
- Minimum GPA 3.00
- 18 credit hours in ROBO courses
- One core course required: ROBO 5xxx: Intro to Robotics
- Candidacy: B- or better in all 5000+ level courses

Mechatronics, Robotics and Automation Engineering

MS Degrees

Table 1. Completions in CIP 14.4201 Automation Engineering/Robotics Master's degrees.

	# Institutions (2021)	Completions (2021)	Completions Per Year (Avg. 2017-2021)	% Change since 2017
National (total)	17	452	26.6	+102%
National (public)	10	173	17.3	+322%
West Division/Mountain Region	4	89	22.3	+585%
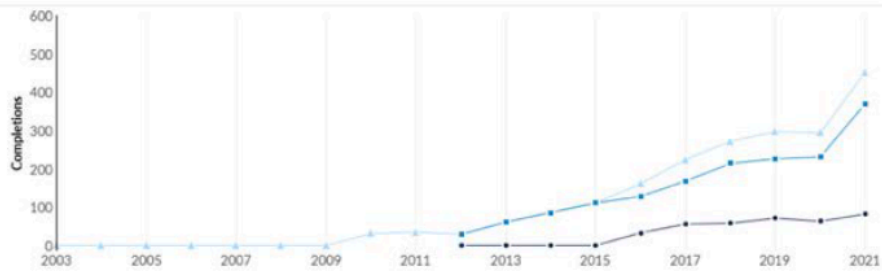
	2012 Completions	2021 Completions	% Change
Distance Offered Programs	0	82	Insf. Data
Non-Distance Offered Programs	29	370	+1,175.9%
All Programs	29	452	+1,458.6%

PhD Degrees

Table 2. Completions in 14.4201 Automation Engineering/Robotics PhD degrees.

	# Institutions (2021)	Completions (2021)	Completions Per Year (Avg. 2017-2021)	% Change since 2017
National (total)	6	45	7.5	+88%
National (public)	3	18	6	+1700%
West Division/Mountain Region	1	6	4	+500%
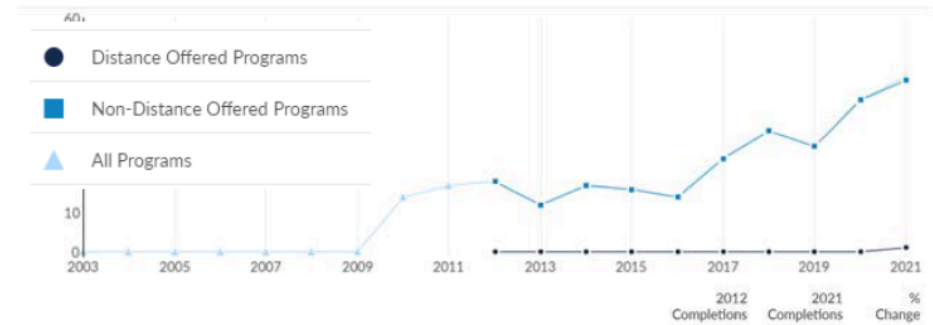
	2012 Completions	2021 Completions	% Change
Distance Offered Programs	0	1	Insf. Data
Non-Distance Offered Programs	18	44	+144.4%
All Programs	18	45	+150.0%

MS Degrees

Assumptions for MS in Robotics Enrollment Projections:
- Labor demand and interest in Robotics graduate program will continue to grow.
- No other large public university in close proximity to Colorado will launch a similar program in the next 5 years.
- The MS program will continue to attract new students each year.
- The 3-year graduation rate for the MS in Robotics will be similar to the 2- and 3-year master's graduation rate for Aerospace Engineering, Electrical Engineering, Computer Science and Mechanical Engineering. 2-year graduation rate is around 60% and the 3-year average is around 83%.
- There will be some attrition each year as students stop out of the program.
- Residency conversion rates are difficult to estimate since nonresident citizenship status is not a factor in these projections and most MS students resident in Colorado for two years.

Table 5. ODA Enrollment Projections for MS in Robotics

	Year 1	Year 2	Year 3	Year 4	Year 5
New students					
Resident	5	7	9	10	12
Non-Resident	8	10	12	15	18
Continuing					
Resident		5	8	10	12
Non-Resident		7	11	14	17
Degrees Awarded		9	14	18	21
Total Enrolled:	13	29	40	49	59

PhD Degrees

Assumptions for PhD in Robotics Enrollment Projections:
- The initial cohort numbers will be slightly larger than Colorado School of Mines but not as large as established programs such as University of Michigan.
- Labor demand and interest in Robotics graduate program will continue to grow.
- No other large public university in close proximity to Colorado will launch a similar program in the next 5 years.
- The PhD program will continue to attract new students each year.
- There will be some attrition each year as students stop out.
- The 5-year graduation rate will be comparable to similar programs in Engineering, around 70%.
- Residency conversion rates are difficult to estimate since nonresident citizenship status is not a factor in these projections.

Table 6. ODA Enrollment Projections for PhD in Robotics

	Year 1	Year 2	Year 3	Year 4	Year 5
New students					
Resident	4	5	7	9	11
Non-Resident	6	7	9	10	12
Continuing					
Resident		5	11	14	18
Non-Resident		4	10	12	15
Degrees Awarded					7
Total Enrolled:	10	21	37	45	56

- Submitted proposal intent form: 9/10/22

- Marketing and budget analysis: 2/16/23

- GEC presentation and feedback: 4/10/23

- Full proposal submission (with revisions from GEC): 4/26/23

- EAC presentation: 5/3/23

- Regents presentation: June 2023

- 'Soft' launch: Fall 2023

- Full launch: Fall 2024

College Criteria for Comprehensive Review, Promotion, and Tenure of Tenure-Track Faculty

College of Engineering and Applied Science
University of Colorado Boulder
March 30, 2023

The following sections of Regent Policy 5 provide the basis for this document. The University of Colorado Board of Regents set the *standards* for earning reappointment, tenure, and promotion, and are ultimately responsible for awarding tenure. Primary academic units set the *criteria* for meeting the university standards. College criteria are advisory to the primary units and provide consistency across the College of Engineering and Applied Science.

Regent Standards for Tenure (Section 5.D.2) [excerpts]

1) As stated in Regent Policy 5 Section D: Reappointment (to a tenure-track position), Tenure, and Promotion, Section 5.D.2(A) states that, "Tenure may be awarded only to faculty members with demonstrated meritorious performance in each of the three areas of: teaching (or librarianship), scholarly/creative work, and leadership and service (to the university, profession and/or public); and demonstrated excellence in either teaching, or scholarly/creative work."

2) Section 5.D.2(B) states that, "A recommendation of tenure based on excellence in scholarly/creative work shall include evidence of impact beyond the institution. A recommendation for tenure based on excellence in teaching shall include multiple measures of teaching evaluation and demonstrated achievement at the campus, local, national, and/or international level which furthers the practice and/or scholarship of teaching and learning beyond one's immediate instructional setting."

Primary Unit Criteria for Reappointment (to a tenure-track position), Tenure, and Promotion (Section 5.D.3) [quoted]

(A) Primary units develop criteria that define the teaching, scholarly/creative work, and leadership and service expectations for faculty, such as expectations for publications, grants for scholarly/creative work, measures of clinical excellence, etc., in terms of their scholarly field(s). These primary unit criteria are reviewed for rigor, fairness, and consistency with regent requirements and are not effective until approved by the dean and provost. In those cases where the primary unit has requested and received Board of Regents approval of specific alternative or additional criteria, those criteria shall be applied in appointment, reappointment, tenure, and promotion decisions.

   (1) If new or revised primary unit criteria have been adopted during a faculty member's tenure probationary period, the faculty member may choose to be evaluated for tenure based on the new criteria or the criteria in place at the time of appointment. When a faculty member is evaluated for promotion to full professor, the current primary unit criteria shall apply. See the corresponding administrative policy statement.

(B) The merit of the candidate is the only consideration in recommendations for awarding tenure. The program requirements of the primary unit shall be considered only at the time of appointment and reappointment.

(C) To be promoted to the rank of Professor (also referred to as "Full Professor"), an individual should have the terminal degree appropriate to their field or its equivalent, and:

   (1) A record that, taken as a whole, may be judged to be excellent; and

(2) A record of significant contribution to graduate and undergraduate education, unless individual or departmental circumstances can be shown to require a stronger emphasis, or singular focus, on one or the other; and

(3) A record since receiving tenure or promotion to Associate Professor that indicates substantial, significant, and continued growth, development, and accomplishment in teaching (or librarianship), scholarly/creative work, and leadership and service." [Regent Policy 5.D.3.(C)]

Additional Guidance

Regent Policy 5, Section 5.C.2(E) states that, "The process leading to the award of tenure is an evaluation of a faculty member's cumulative performance and is a process that is separate and distinct from the annual performance evaluation."

CU System Administrative Policy Statement (APS) 1022, Section VII C. specifies that "For cases involving reappointment at comprehensive review, faculty and review committees at each level of review vote on whether the candidate is either: (1) on track for tenure; (2) not yet on track for tenure but could meet standards for tenure with appropriate corrections; or (3) not on track for tenure." However, Boulder campus practice is to seek a determination based on a single vote on the question of whether the candidate is on track to meet tenure standards at time of tenure review.

A. College of Engineering & Applied Science Criteria for Reappointment

Per CU System Administrative Policy Statement 1022, the outcome of comprehensive review for reappointment is a determination of "whether the candidate is either: (1) on track for tenure; (2) not yet on track for tenure but could meet standards for tenure with appropriate corrections; or (3) not on track for tenure." The college defines the criterion for reappointment as whether the candidate is on track to meet the excellence standard in teaching and/or scholarly/creative work as shown in the tenure section below.

Specifically, the candidate must demonstrate evidence of the development of an independent, innovative, and high-impact research career through the publication of significant papers in top journals or other venues of equivalent quality and impact. The candidate's graduate student advisees and co-advisees are involved in research and are on track to be co-authors or lead authors on multiple publications. The candidate is working on problems recognized as significant by experts in the field. The candidate's scholarly/creative work shows considerable evidence of innovation, broader impact, and growth. The candidate is on track to have a sustained research program fully supported by external funding at the time of tenure evaluation, including grants on which the candidate is PI, and which would support a vigorous research program as defined by the candidate's unit.

Regarding teaching, the candidate must be teaching courses following specific unit processes (e.g., a mixture of undergraduate and graduate courses of assorted sizes). In terms of the Teaching Quality Framework (TQF) rubric, the candidate must show progress towards becoming an effective teacher, as demonstrated by proficiency levels of at least basic (or the unit equivalent) for all dimensions using the TQF rubric for each unit. See the Teaching Evaluation section below for more details. Also, note that TQF framework rubrics may vary across primary units but must follow the principles laid out in this document). In cases where the candidate has struggled or has weaknesses in the classroom or in mentoring research trainees, efforts must be underway to improve the candidate's performance by involving mentors, the Center for Teaching and Learning, or other appropriate internal or external support structures.

Lastly, the candidate must be active in service activities at least at one of multiple levels (e.g., program, department, institute, college, campus, professional organization, etc.). Service for professional and scholarly organizations should be an emphasis on the path to tenure.

B. College of Engineering & Applied Science Criteria for Tenure

In the following sections, the College of Engineering and Applied Science (CEAS) expectations are outlined for ratings of meritorious and excellent in teaching, scholarly/creative work, and service/leadership. Per **Regent Policy 5 (Section 5.D.2.(B))**, "A recommendation of tenure based on excellence in scholarly/creative work shall include evidence of impact beyond the institution. A recommendation for tenure based on excellence in teaching shall include multiple measures of teaching evaluation and demonstrated achievement at the campus, local, national, and/or international level which furthers the practice and/or scholarship of teaching and learning beyond one's immediate instructional setting."

1. Evaluation of Teaching

The college uses seven dimensions to evaluate candidates for reappointment, tenure, and promotion actions. These dimensions are part of the Teaching Quality Framework (TQF) that was developed jointly with input from all college units. These dimensions tie to specific criteria as described in rubrics developed by the college and units. An example of the rubric is shown here, although units can have unique rubrics. These dimensions include (1) course goals and alignment; (2) course preparation; (3) teaching methods and practices; (4) presentation; (5) student outcomes; (6) mentorship/advising; and (7) professional reflection and development. There are opportunities to consider inclusive and equity-based practices throughout the TQF criteria. Unit TQF rubrics and criteria may vary slightly but are expected to cover similar content as these dimensions.

To meet the criteria for a "meritorious" rating for tenure, candidates must show evidence of sustained high-quality educational practice, typically, at both the undergraduate and graduate levels. In the context of the TQF dimensions described above, a rating of "meritorious" could be indicated by demonstrated proficiency levels of at least basic (or the unit equivalent) for all dimensions using the TQF rubric for each unit. Note that any significant deficiency in any of the dimensions could result in a rating of less than meritorious, depending on the severity of the deficiency (see the Professional Rights and Responsibilities document Part II A.2. for examples of unacceptable conduct). The candidate must be active and effective in research mentoring and supervision for all levels undertaken (e.g., primarily PhD students, but also undergraduate students, MS students, and post-doctoral researchers as appropriate). Candidates must show evidence of an active PhD student cohort at varying stages of progression toward graduation. Candidates are expected to demonstrate effective mentoring of doctoral students, primarily, unless individual circumstances can be shown to require a different emphasis (e.g., as could be the case for some candidates being hired with tenure). Being an effective mentor means providing rigorous training, supporting their professional development as a researcher, and facilitating their engagement with their scholarly community. Evidence of training can vary and depends on subfield-specific scholarship and collaboration norms, as explained by the candidate's Primary Unit Evaluation Committee (PUEC), but typically involves coauthored scholarly contributions, student presentations of research at professional meetings, and graduation.

To meet the criteria for an 'excellence' rating for tenure, the candidate must meet all the criteria described above for a meritorious rating and demonstrate in the context of the TQF that they are teaching at an advanced level with demonstrated impact beyond the classroom (e.g., as indicated by demonstrating proficiency level ratings of at least intermediate/professional in all dimensions of the unit specific TQF rubric). In addition, per **Regent Policy 5 (Section 5.D.2.(B))**, the candidate must demonstrate "achievement at the campus, local, national, and/or international level that furthers the practice and/or scholarship of teaching and learning beyond [the candidate's] immediate instructional setting." They must be exceeding discipline expectations in student mentorship, primarily in the number and quality of mentoring at the PhD level.

2. Evaluation of Scholarly/Creative Work

The college expectations for scholarly/creative work include that the candidate establishes an independent research program that is addressing significant issues with noticeable impact beyond the institution. Dissemination of work is expected, can vary by discipline and subdiscipline, and consequently can take forms including, for example, peer-reviewed scholarly journal papers, books, book chapters, monographs, peer-reviewed (or journal equivalent) conference papers, scientific/technical reports, software, datasets, publicly available technical, provisional, and awarded patents, and other entrepreneurial activities. The support of postdoctoral researchers, as well as MS and BS students is valued, but the primary expectation is that the candidate's emphasis should be on advising and mentoring PhD students. The college has no specific expectations for external funding level (or expenditures from external sources), as funding can vary significantly between disciplines; however, a candidate must have sufficient external funding to support the research and mentoring of students and research-related activities. The funding can come from federal agencies, private foundations, or industry with the faculty member as principal investigator (PI) or co-PI. A primary focus in all areas is to show innovation and impact beyond the institution through scholarly/creative work as per **Regent Policy 5 (Section 5.D.2.(B))**, "A recommendation of tenure based on excellence in scholarly/creative work shall include evidence of impact beyond the institution."

To meet the criteria for a "meritorious" rating at tenure review, candidates must show that their scholarly/creative work is disseminated in any discipline-specific appropriate manner (e.g., journal papers, conference proceedings, etc.), although not necessarily in the top venues within their field. The rate of publication is close to or below the candidate's peers (both internal and external) at the same career stage. Graduate students are involved in research, primarily as co-authors. The candidate is developing a notable scholarly reputation at other universities and/or in industry. The candidate's scholarly/creative work shows modest or limited evidence of innovation and broader impact, and/or may not show evidence of being independent from their doctoral or postdoctoral (if applicable) training. The candidate has applied for and may have received external funding, but not at a level sufficient to support a research group of an appropriate size necessary to maintain a vigorous research program as defined by their unit.

To meet the criteria for an "excellence" rating for tenure, the candidate demonstrates evidence of independent, innovative, and high-impact scholarly/creative work through the publication of papers in top journals or other venues of equivalent quality and impact. The rate of publication compares favorably to the candidate's peers (internal and external) at the same career stage. Graduate students are involved in research and have appeared as authors (including as lead authors, as appropriate) on multiple publications. The candidate is working on problems recognized as significant by experts in the field and has developed a scholarly reputation at other universities and/or in industry. Recognized authorities outside the University acknowledge the candidate's national and international reputation and innovative contributions to scholarly accomplishment, and the candidate may have received internal and/or external awards related to research. The candidate possesses a reputation of primary association with a particular achievement or subject, providing compelling evidence of research leadership. The candidate's scholarly/creative work shows considerable evidence of innovation, broader impact, and sustained growth which can include entrepreneurship activities (such as patents), and/or policy that could guide industry or governmental efforts. The candidate has a sustained research program fully supported by external funding, including grants on which they are PI, and can support a vigorous research program as defined by their unit.

3. Evaluation of Leadership and Service

The evaluation of leadership and service is focused on overall contributions to the candidate's program, department, institute, college, and/or campus, in the form of semester or year-long formal and informal activities that directly support our collective teaching and research missions. Standard forms of internal service are typically committee work, faculty peer mentoring, and significant administrative and/or leadership roles. Internal service also includes serving as a member of or chairing an ad hoc committee including faculty search committees. External service contributions take the form of service to scholarly communities, through formal and informal activities that directly support that community's educational or scholarly/creative activities. Other common forms of external service focus on reviewing papers and proposals, either as an ad hoc reviewer or a member of a program committee or other formal panel; helping to organize or leading a professional meeting, workshop, symposia, or conference; serving a professional society; or participating in outreach to the public (i.e., local, state, national, or international). Per **Regent Policy 5 (Section 5.D.2.(A))**, a candidate's leadership and service performance must be at least meritorious. An excellent rating in leadership and service typically requires substantial leadership positions and/or significant impact in the department, institute, college, campus, or society. Given that a rating of excellence in leadership and service is neither required nor sufficient for tenure, candidates are encouraged to focus on achieving a rating of excellence in creative/scholarly work and/or teaching.

To meet the criteria for a "meritorious" rating at time of tenure review, the candidate must have served on one or more departmental committees and may be involved in college-level or campus committees, primarily as a participant. The candidate may have held some leadership responsibilities within the department (or program or institute), for example, leading a graduate student recruiting committee or organizing a departmental seminar series. The candidate actively participates in department functions including faculty hiring processes, voting (as appropriate), mentoring other faculty within their department, and attending department meetings. The candidate actively participates in activities intended to broaden inclusion in their department/unit. The candidate participates in external professional activities intended to promote their field's development. Activities may include, for example, chairing sessions at conferences, workshops and/or symposia; serving on program boards or review panels; reviewing papers and proposals; and/or professional activities, with a focus on broadening the participation of underrepresented and non-traditional groups in science and engineering. Outreach efforts to broaden participation in science and engineering are encouraged.

C. College of Engineering & Applied Science Criteria for Promotion to Full Professor

In the following sections, the College of Engineering and Applied Science (CEAS) expectations are outlined for promotion to full professor. **Regent Policy 5.D.3.(C) states that the standard,** "To be promoted to the rank of Professor (also referred to as 'Full Professor'), an individual should have: A record that, taken as a whole, may be judged to be excellent; a record of significant contribution to graduate and undergraduate education, unless individual or departmental circumstances can be shown to require a stronger emphasis, or singular focus, on one or the other; and a record since receiving tenure or promotion to Associate Professor that indicates substantial, significant, and continued growth, development, and accomplishment in teaching (or librarianship), scholarly/creative work, and leadership and service."

The evaluation for promotion to full professor encompasses the candidate's whole record since first appointment to a tenure track position (as opposed to the record solely during the probationary period, as is the case for tenure review). Note that overall excellence does not require an individual evaluation on each component as is the case for tenure.

1. A Record of Significant Contribution to Education

The college expects candidates for promotion to full professor to have shown commitment to undergraduate and graduate education, including efforts toward continuous improvement. The college expects candidates at this stage to meet at least some of the criteria described above for excellence in teaching during tenure review. In terms of the TQF rubric, the college expects that the candidate has achieved at least basic proficiency levels, with occasional professional and advanced proficiency in some criteria using their unit's TQF rubric. The candidate must continue to be active and effective in PhD research mentoring and supervision, and in MS and undergraduate student and postdoctoral research mentoring if that is expected by their unit. Candidates must show evidence of an active PhD student cohort at varying stages of progression toward graduation. Candidates for promotion to full professor are expected to have graduated multiple PhD students over their academic career.

2. A Record of Significant Contribution to Creative/Scholarly Work

The college expects that candidates at this stage continue to meet the same criteria as what is described above for excellence in scholarly/creative works during tenure review. Specifically, the candidate continues to disseminate high-impact research through publication of papers in top journals and/or other types of creative/scholarly work in venues of equivalent quality and impact. The candidate's graduate students are involved in research and have appeared as authors on multiple publications since tenure. The candidate is working on problems recognized as significant by experts in the field and has maintained a scholarly reputation of leadership. Recognized authorities outside the University acknowledge the candidate's national and international reputation and innovative contributions in scholarly accomplishment, and the candidate may have received both internal and external awards related to research. The candidate possesses a reputation of primary association with a particular achievement or subject, providing compelling evidence of research leadership. The candidate's scholarly/creative work shows considerable evidence of innovation, broader impact, and sustained growth, which can include entrepreneurship activities (such as patents). The candidate has a sustained research program fully supported by external funding including grants on which they are PI and is supporting a vigorous research program as defined by their unit, including funding their PhD students through graduation.

3. Substantial, Significant, and Continued Growth Since Tenure

The college expects that candidates for promotion to full professor have demonstrated substantial, significant, and continued growth since tenure. At this stage, the college expects that candidates would have continued or increased the rate of publication, student training, have been involved in leadership and service activities at multiple levels as appropriate, etc.